

Laboratory PAP Works, 18/1, Main Road, TVS Nagar, Padi, Chennai, Tamil Nadu

Accreditation Standard ISO/IEC 17025:2005

Discipline Mechanical Calibration

Issue Date 23.09.2015

Certificate Number C-0972

Valid Until 22.09.2017

Last Amended on -

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Quantity Measured / Instrument	Range/ Frequency	* Calibration Measurement Capability (\pm)	Remarks
I. DIMENSION			
1. CALIPERS ^{\$} (Vernier/Dial/Digital) LC: 0.01mm	Upto 600 mm	12.5 μ m	Using Gauge Blocks & Caliper Checker by Comparison Method
2. DEPTH GAUGE ^{\$} (Vernier/Dial/Digital) LC: 0.01mm	Upto 300 mm	9.5 μ m	Using Gauge Blocks by Comparison Method
3. EXTERNAL MICROMETER ^{\$} LC: 0.001mm	Up to 100 mm > 100 mm upto 250 mm > 250 mm upto 500 mm	1.9 μ m 4.2 μ m 6.6 μ m	Using Gauge Blocks by Comparison Method
4. SETTING GAUGE ^{\$} (ROD)	Upto 400 mm	4.2 μ m	Using Gauge Blocks & 2D-Height Gauge by Comparison Method
5. DIAL GAUGE ^{\$} (Lever Type) LC: 0.001mm	Upto 2 mm	2.0 μ m	Using Universal Length Meas. Machine (ULM) by Comparison Method
6. DIAL GAUGE ^{\$} (Plunger Type) LC: 0.001mm LC: 0.01mm	Upto 100 mm Upto 50 mm	2.7 μ m 6.3 μ m	Using ULM by Comparison Method

Shally Sharma
Convenor

Avijit Das
Program Manager

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7. PLAIN PLUG GAUGE ^s	Up to \varnothing 100 mm > \varnothing 100 mm to \varnothing 200 mm > \varnothing 200 mm to \varnothing 300 mm	1.9 μ m 2.0 μ m 2.5 μ m	Using Gauge Blocks/ Electronic. Comparator/ ULM by Comparison Method
8. SNAP GAUGE/ WIDTH GAUGE/ GAP GAUGE ^s	Upto 100 mm > \varnothing 100 mm to \varnothing 200 mm > \varnothing 200 mm to \varnothing 300 mm	1.8 μ m 3.0 μ m 4.9 μ m	Using Gauge Blocks by Comparison Method
9. DEPTH MICROMETER/ DEPTH DIAL GAUGE ^s LC: 0.001mm	Upto 300 mm	5.9 μ m	Using Gauge Blocks by Comparison Method
10. MICROMETER HEAD ^s LC: 0.001mm	Upto 50 mm	2.0 μ m	Using ULM by Comparison Method
11. INTERNAL/STICK MICROMETER ^s	Upto 300 mm	6.3 μ m	Using Gauge Blocks/ Caliper Checker/ Gauge Block Accessories by Comparison Method
12. HEIGHT GAUGE [#] (Vernier / Dial / Digital / Electronic) LC: 0.001mm	Upto 600 mm	12.0 μ m	Using Gauge Blocks/ Caliper Checker/ Gauge Block Accessories by Comparison Method
13. BORE GAUGE ^s (For Transmission)	Upto 2 mm	4.3 μ m	Using ULM by Comparison Method

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14. THICKNESS GAUGE ^{\$} (Dial/Digital)	Upto 50 mm	1.2 μ m	Using Gauge Blocks by Comparison Method
15. INSIDE/OUTSIDE DIAL CALIPER ^{\$}	Upto 50 mm	6.0 μ m	Using Gauge Block & Gauge Block Accessories by Comparison Method
16. MEASURING PIN ^{\$}	Upto 20 mm	2.6 μ m	Using Gauge Block & Electronic Comparator/ ULM by Comparison Method
17. CYLINDRICAL SETTING MASTER ^{\$}	Upto \varnothing 50 mm > \varnothing 50 mm to \varnothing 100 mm	1.6 μ m 2.1 μ m	Using Gauge Block & Electronic Comparator/ ULM by Comparison Method
18. PLAIN RING GAUGE ^{\$}	\varnothing 6 mm to \varnothing 100 mm > \varnothing 100 mm to \varnothing 200 mm > \varnothing 200 mm to \varnothing 300 mm	3.4 μ m 3.5 μ m 3.8 μ m	Using ULM & Master Setting Ring by Comparison Method
19. THREAD PLUG GAUGE ^{\$}	\varnothing 2 mm to \varnothing 100 mm > \varnothing 100 mm to \varnothing 150 mm	3.3 μ m 4.5 μ m	Using ULM & Thread Meas. Wires by Comparison Method
20. THREAD RING GAUGE ^{\$}	\varnothing 10 mm to \varnothing 100 mm	2.4 μ m	Using ULM & Master Setting Ring by Comparison Method
21. V-BLOCK ^{\$} (Parallelism Symmetry Flatness)	Upto 200 mm	5.8 μ m	Using Electronic Probe & Test Mandrel by Comparison Method

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22. COATING THICKNESS GAUGE ^{\$}	Upto 1600 μ m	5.8 μ m	Using Master Foils by Comparison Method
23. MASTER FOILS ^{\$}	Upto 4.5 mm	3.8 μ m	Using Gauge Blocks & Electronic Comparator by Comparison Method
24. FEELER GAUGE ^{\$}	Up to 1.0 mm	2.7 μ m	Using Digital Micrometer
25. SURFACE PLATE [#] Grade-1 & Coarser	3 m x 3 m	$2.4 \sqrt{\frac{L+W}{125}}$ μ m	Using Spirit Level L. C. 20 μ m by Comparison Method
26. PISTOL CALIPERS ^{\$} LC: 0.001mm	Upto 50 mm	5.0 μ m	Using Gauge Blocks by Comparison Method
27. COMPARATOR STAND ^{\$}	Upto 300 mm	3.2 μ m	Using Electronic Probe by Comparison Method
28. RADIUS GAUGE ^{\$}	Up to 25 mm	8.0 μ m	Using Video Measuring M/c by Comparison Method
29. THREAD PITCH GAUGE ^{\$}	Up to 10 mm	13.0 μ m	Using Video Measuring M/c by Comparison Method
30. FLUSH PIN GAUGE ^{\$}	Upto 300 mm	4.1 μ m	Using 2D-Height Gauge by Comparison Method

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31. ELECTRONIC/ LVDT PROBE ^{\$}	0 to 100 mm	1.9 μ m	Using ULM by Comparison Method

* Measurement Capability is expressed as an uncertainty (\pm) at a confidence probability of 95%

^{\$}Only in Permanent Laboratory

[#]The laboratory is also capable for site calibration however, the uncertainty at site depends on the prevailing actual environmental conditions and master equipment used.

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